#### (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

## (19) World Intellectual Property Organization International Bureau





## (43) International Publication Date 3 November 2005 (03.11.2005)

#### PCT

# (10) International Publication Number WO 2005/102437 A3

(51) International Patent Classification<sup>7</sup>:

A61M 29/00

(21) International Application Number:

PCT/US2005/012877

(22) International Filing Date: 16 April 2005 (16.04.2005)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 60/563,058

16 April 2004 (16.04.2004) US

- (71) Applicant (for all designated States except US): CORDIS CORPORATION [US/US]; 14201 NW 60th Avenue, Miami Lakes, FL 33014 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): SULLIVAN, Jason, R. [US/US]; 8 Haytown Road, Lebanon, NJ 08833 (US). WONG, Wal, Chung, Jonathan [CA/US]; 235 Main Street Apt. 3D, Sommerville, NJ 08875 (US).
- (74) Agent: MONTGOMERY, Michael, W.; 14201 N.W. 60th Avenue, Miami Lakes, FL 33014 (US).

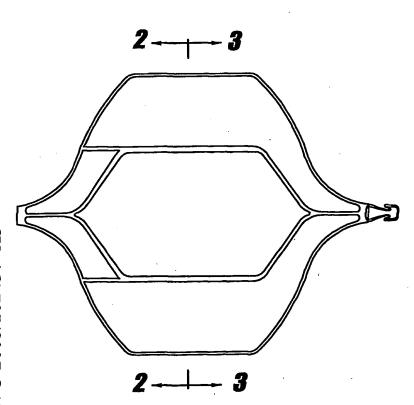
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

#### Published:

with international search report

[Continued on next page]

(54) Title: ASYMMETRICAL MEDICAL FILTER



(57) Abstract: A medical filter has a double-basket design, in which the two filter baskets have balanced filtering efficiencies, so that both filter baskets tend to collect or capture amounts of material that are approximately equivalent. In other words, a second, or "downstream" filter basket may be designed to have a filter efficiency greater than that of a first or "upstream" There are a variety filter basket. of ways in which this tailored filter basket performance can be achieved. Some examples include increasing the number of struts or decreasing the size of the filter cells or other filter elements of the second or "downstream" filter basket. Likewise, a similar result may be reached by decreasing the number of struts or increasing the size of the filter cells or other filter elements of the first or "upstream" filter basket. In some cases, such a filter may be used in a blood vessel, for the purpose of intercepting thrombus. Where the filter is implanted in a blood vessel, it may be retrievable for a longer period of time.



(88) Date of publication of the international search report: 9 March 2006

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

### INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/12877

A. CLASSIFICATION OF SUBJECT MATTER IPC(7) : A61M 29/00			
US CL : 606/200			
According to International Patent Classification (IPC) or to both national classification and IPC			
B. FIELDS SEARCHED			
Minimum documentation searched (classification system followed by classification symbols)  U.S.: 606/200			
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched			
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)			
C. DOCUMENTS CONSIDERED TO BE RELEVANT			
Category *	Citation of document, with indication, where a	Relevant to claim No.	
х	US 6,364,895 B1 (Greenhalgh) 02 April 2002 (02.0	1,2,4,5,7,8	
			3,6
Y	US 6,241,746 B1 (Bosma et al.) 05 June 2001 (05.06.2001), See entire document.		1-8
		-	
	·		
		·	
Further documents are listed in the continuation of Box C. See patent family annex.			
	pecial categories of cited documents:	"T" later document published after the inte date and not in conflict with the applic	ation but cited to understand the
"A" document	defining the general state of the art which is not considered to be of relevance	principle or theory underlying the inve	ntion
. *	plication or patent published on or after the international filing date	"X" document of particular relevance; the considered novel or cannot be considered when the document is taken alone	laimed invention cannot be red to involve an inventive step
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of enother citation or other special reason (as specified)		"Y" document of particular relevance; the considered to involve an inventive step	
' '	t referring to an oral disclosure, use, exhibition or other means	with one or more other such document obvious to a person skilled in the art	
"P" document published prior to the international filing date but later than the priority date claimed		"&" document member of the same patent family	
Date of the actual completion of the international search		Date of mailing of the international search report	
1 10 October 2005 (10 10 2005)			
Name and mailing address of the ISA/US  Authorized officer  Authorized officer			Tree /
Mail Stop PCT, Attn: ISA/US Commissioner for Patents		Sarah K. Webb Sharen To John Jones Telephone No. (703) 308-0858	
P.O. Box 1450		Telephone No. (703) 308-0858	\int_{i_{a_{i}}}}}}}}}}
Alexandria, Virginia 22313-1450  Facsimile No. (571) 273-3201			
	<u> </u>	·	

Form PCT/ISA/210 (second sheet) (April 2005)